

**I claim:**

1. A photocatalytic electric fan, comprising:

a main body having a receiving tank;

a motor fixedly placed in said receiving tank and having a rotation shaft;

5 a fan blade fixed on said rotation shaft of said motor;

a reticular lamp-fixing element fixedly joined on said main body; and

a lamp being a photocatalytic lamp, said lamp being positioned by said reticular lamp-fixing element, said lamp having at least a photocatalytic lamp tube, a glass-fiber-cloth being sleeved outside said photocatalytic lamp tube,

10 said glass-fiber-cloth having a photocatalytic coating formed of titanium dioxide, each said lamp tube being connected to an electric connection seat, said electric connection seat being connected to a stabilizer, a starter, and a power source, said starter and said starter being disposed in said main body.

2. The photocatalytic electric fan as claimed in claim 1, wherein said reticular

15 lamp-fixing element is a back net and a face net covering said fan blade, and lamps are disposed on said back net or said face net or both.

3. The photocatalytic electric fan as claimed in claim 1, wherein the wavelength of light emitted by said photocatalytic lamp tube is between 200~760 nm.

4. The photocatalytic electric fan as claimed in claim 1, wherein said  
20 photocatalytic lamp tube is an ultraviolet lamp tube.

5. The photocatalytic electric fan as claimed in claim 1, wherein said photocatalytic lamp tube is of straight-tube shape or ring-tube shape.

6. The photocatalytic electric fan as claimed in claim 1, wherein a pair of said photocatalytic lamp tubes are provided.

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7. The photocatalytic electric fan as claimed in claim 1, wherein two sides of said main body are open, and a plurality of holder rods are disposed in said main body to connect a central lump, said receiving tank being disposed in said central lump, a back net being joined at an opening of said main body  
5 near the side of said fan blade, said reticular lamp-fixing element being said back net and/or the position of said central lump and said holder rods, said reticular lamp-fixing element being used to connect said lamp.
8. The photocatalytic electric fan as claimed in claim 7, wherein a face net is disposed at the other opening of said main body, and said face net is  
10 rotatable.
9. The photocatalytic electric fan as claimed in claim 7, wherein a face net is disposed at the other opening of said main body, and said reticular lamp-fixing element is said face net, said reticular lamp-fixing element being used to connect said lamp.
- 15 10. The photocatalytic electric fan as claimed in claim 1, wherein said power source of said lamp is connected with a power source of said motor.
11. The photocatalytic electric fan as claimed in claim 1, wherein a switch is disposed on said power source of said lamp, and said switch is joined on said main body.
- 20 12. The photocatalytic electric fan as claimed in claim 1, wherein a plug is disposed on said power source of said lamp.
13. The photocatalytic electric fan as claimed in claim 1, wherein said reticular lamp-fixing element has at least a lamp-positioning element, said lamp-positioning element being a panel of slightly curved shape, one end of

said lamp-positioning element being fixed on said reticular lamp-fixing element, the other end thereof being hooked with said lamp tube of said lamp or at said electric connection seat.